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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,663	01/19/2006	Shibo Zhang	416272004600	4218
20872	7590	11/27/2007		
MORRISON & FOERSTER LLP 425 MARKET STREET SAN FRANCISCO, CA 94105-2482			EXAMINER COLLINS, CYNTHIA E	
			ART UNIT 1638	PAPER NUMBER
			MAIL DATE 11/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/526,663

Applicant(s)

ZHANG ET AL.

Examiner

Cynthia Collins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-14, 17 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 18-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3205.51205</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group III, claims 15-16 and 18-20 in the reply filed on September 5, 2007 is acknowledged.

Drawings

The drawings are objected to because the details in Figures 2-5 are not discernable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 is indefinite in the recitation of “about”. It is unclear what constitutes the upper and lower limits of the concentrations of reagents present in the meristem proliferation medium, as the specification provides no guidance with respect to these limits.

Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 19 is indefinite in the recitation of “MPM-Cu”. It is unclear what “MPM-Cu” is, as “MPM-Cu” is not defined in the specification. Further, the prior art of record does not define or teach “MPM-Cu”.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an

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international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 15 is rejected under 35 U.S.C. 102(e) as being anticipated by Zhang S. et al. (US Patent No. 6,486,384, filed September 23, 1998 and issued November 26, 2002).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

The claim is drawn to a method for producing a transformed maize plant comprising; (a) inducing a shoot meristem culture by culturing on a meristem proliferation medium an isolated maize tissue selected from the group consisting of vegetative shoot meristem tissue, meristem tissue from axillary shoot, stem tissue, or leaf base tissue; (b) introducing a nucleic acid into at least one cell of the shoot meristem culture; (c) selecting the transformed cells; and (d) and growing the transformed cells in a regeneration medium so as to produce a transformed plant, wherein the meristem proliferation medium comprises from 0 mg/L to about 3 mg/L of an auxin, from about 2 mg/L to about 8 mg/L of a cytokinin, from about 10 g/L to about 60 g/L of maltose or about 10 g/L to about 60 g/L of sucrose; from about 0.1 uM to about 50 uM copper; and from about 30 uM to about 1500 uM zinc.

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Zhang S. et al. teach a method for producing a transformed maize plant comprising culturing an isolated meristematic tissue of the plant on a meristem proliferation medium so as to produce adventitious meristematic cells in the isolated meristematic tissue, including meristematic tissue isolated from leaf base, introducing a nucleic acid into at least one of the adventitious meristematic cells, thereby producing a transformed cell comprising the nucleic acid; selecting transformed meristematic cells or at least one structure thereof, and regenerating a transformed plant from the transformed meristematic cells or structure thereof, wherein the plant is a cereal plant, including maize, and wherein the meristem proliferation medium comprises from 0 mg/L to about 3 mg/L of an auxin, from about 2 mg/L to about 8 mg/L of a cytokinin, from about 10 g/L to about 60 g/L of maltose or about 10 g/L to about 60 g/L of sucrose; and from about 0.1 μ M to about 50 μ M copper. (column 3 lines 1-25; column 36 claims 1-2).

While Zhang S. et al. do not explicitly teach the presence of zinc at requisite concentration in their meristem proliferation medium, Zhang S. et al. implicitly teach the presence of zinc at requisite concentration in their meristem proliferation medium, as the MS basal medium used to prepare their meristem proliferation medium inherently comprises zinc at a requisite concentration (8.6 mg/L $\text{ZnSO}_4 \cdot 7\text{H}_2\text{O}$). See, e.g., pages 210-211 of Dodds J.H. et al. *Experiments in Plant Tissue Culture*, 2nd edition, Cambridge University Press 1985.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 18-20 are rejected under 35 U.S.C. 103(a) as being obvious over Zhang S. et al. (US Patent No. 6,486,384, filed September 23, 1998 and issued November 26, 2002) in view of Zhong H. et al. (In-vitro morphogenesis of corn (*Zea mays* L.), 1992, *Planta*, 187:483-489).

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

The claims are drawn to a method for producing a transformed maize plant comprising; (a) inducing a shoot meristem culture by culturing on a meristem proliferation medium an isolated maize tissue selected from the group consisting of vegetative shoot meristem tissue, meristem tissue from axillary shoot, stem tissue, or leaf base tissue; (b) introducing a nucleic

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acid into at least one cell of the shoot meristem culture; (c) selecting the transformed cells; and (d) and growing the transformed cells in a regeneration medium so as to produce a transformed plant, wherein the meristem proliferation medium comprises from 0 mg/L to about 3 mg/L of an auxin, from about 2 mg/L to about 8 mg/L of a cytokinin, from about 10 g/L to about 60 g/L of maltose or about 10 g/L to about 60 g/L of sucrose; from about 0.1 uM to about 50 uM copper; and from about 30 uM to about 1500 uM zinc, including a method where the maize is selected from the group consisting of B73, Ohio 43, Missouri 17, PHJ90, PHR81, PHP02, PHN46, and PHP38, PHTE4 and PHJ90, including a method where the maize is B73.

The claims are also drawn to a method for producing a transformed maize plant comprising; (a) inducing a shoot meristem culture by culturing on a meristem proliferation medium an isolated maize stem tissue; (b) introducing a nucleic acid into at least one cell of the shoot meristem culture; (c) selecting the transformed cells; and (d) and growing the transformed cells in a regeneration medium so as to produce a transformed plant.

The teachings of Zhang S. et al. are set forth above.

Zhang S. et al. also teach that the transformation method of their invention is based on the introduction of nucleic acids into meristematic tissues derived from any suitable source including, but not limited to, shoot meristems and leaf base tissue (column 3 lines 19-25).

Zhang S. et al. do not teach maize selected from the group consisting of B73, Ohio 43, Missouri 17, PHJ90, PHR81, PHP02, PHN46, and PHP38, PHTE4 and PHJ90, or inducing a shoot meristem culture by culturing on a meristem proliferation medium an isolated maize stem tissue.

Zhong H. et al. teach inducing a shoot meristem culture by culturing on a meristem proliferation medium isolated maize tissues, including maize stem tissue (page 483 column 1 last paragraph), and including B73 maize (page 487 Table 1).

Given the teachings of Zhang S. et al. that transformed maize plants may be produced by introducing a nucleic acid into meristematic tissues derived from any suitable source including, but not limited to, shoot meristems, and given the teachings of Zhong H. et al. that shoot meristem cultures may be prepared by culturing on a meristem proliferation medium isolated maize tissues including maize stem tissue and including maize tissue obtained from B73 maize, it would have been *prima facie* obvious to one skilled in the art at the time the invention was made to produce transformed maize plants by introducing a nucleic acid into meristematic tissues derived from shoot meristem cultures prepared by culturing on a meristem proliferation medium isolated maize stem tissue and/or maize tissue obtained from B73 maize. One skilled in the art would have been motivated to do so in order to produce transformed maize plants having improved agronomic properties. One skilled in the art would have had a reasonable expectation of success, given the success of both Zhang S. et al. and Zhong H. in the employment of their techniques. Accordingly, one skilled in the art would have been motivated to generate the claimed invention with a reasonable expectation of success. Thus, the claimed invention would have been *prima facie* obvious as a whole to one of ordinary skill in the art at the time the invention was made.

Double Patenting

Claims 15-16 and 18-20 are directed to an invention not patentably distinct from claims 1-2 of commonly assigned US Patent No. 6,486,384. Specifically, the claimed methods are the same as (claim 15) or obvious variants of (claims 16 and 18-20) the methods of claims 1-2 of US Patent No. 6,486,384, as set forth above in the rejections under 35 USC 102 and 103.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned US Patent No. 6,486,384, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined

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application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 15-16 and 18-20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2 of U.S. Patent No. 6,486,384, in view of Zhong H. et al. (In-vitro morphogenesis of corn (*Zea mays* L.), 1992, *Planta*, 187:483-489). Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed methods are the same as (claim 15) or obvious variants of (claims 16 and 18-20) the methods of claims 1-2 of US Patent No. 6,486,384, as set forth above in the rejections under 35 USC 102 and 103.

Remarks

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Collins whose telephone number is (571) 272-0794. The examiner can normally be reached on Monday-Friday 8:45 AM -5:15 PM.

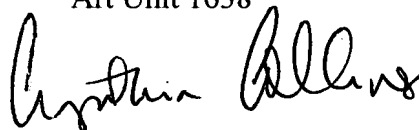
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cynthia Collins
Primary Examiner
Art Unit 1638

CC


11/25/07